1647

824/01

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I hereby certify that this paper is being deposited with the United States Postal Service as first class mail under 37 CFR 1.8 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, DC 20231.

Debra J. Marquette   _Debra J. Marquette_
Name of Person Mailing Paper   Signature

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit	:	1647
Examiner	:	Sharon L. Turner, Ph.D.
Applicant(s)	:	ME Gurney, AM Pauley, and J Li
Serial Number	:	09/328,877
Filed	:	9 June 1999
For	:	Human Sel-10 Polypeptides and Polynucleotides that Encode Them

Commissioner of Patents and Trademarks
Washington, DC 20231

TRANSMITTAL OF A RESPONSE TO A NON-FINAL ACTION (37 CFR 1.111)

Sir:

Transmitted herewith is a reply and/or amendment in the above-captioned application in response to the Examiner's action dated 14 June 2001.
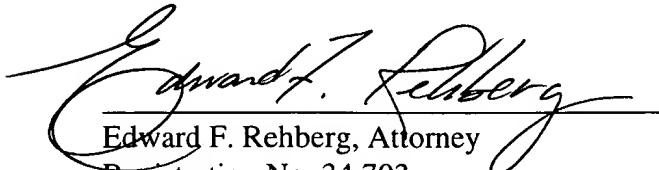
[X]   The reply and/or amendment is being filed under 37 CFR 1.8 and the required Certificate of Mailing appears above.

[]   An additional fee in the amount of $ is required for the amended claims presented and has been calculated as shown in the attached sheet.

Please charge Deposit Account No. **21-0718** in the amount of the additional fee above, or such greater or lesser amount of excess fees for claims as the Commissioner determines is required by law. Triplicate copies of this sheet are enclosed.

EXTENSION OF TIME. In the event this paper is not filed prior to the time set for response, applicant(s) hereby petition for an extension of the period for filing the attached reply and/or amendment to the date of filing this paper, and hereby authorize the Commissioner to charge the extension fee as may be required by 37 CFR 1.17, to Deposit Account No. **21-0718**. If for any

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reason the extension requested above is insufficient to extend this period to the date of this paper, applicant(s) hereby petition for the revival of the above-captioned application as having been unintentionally abandoned and authorize the Commissioner to charge the required fees under 37 CFR 1.17 to Deposit Account No. **21-0718**.

Respectfully submitted,

Date: *8-14-2001*

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Enclosures:
    Reply/Amendment
    [] Calculation of Additional Fees for Amended Claims

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit	:	1647
Examiner	:	Sharon L. Turner, Ph.D.
Applicant(s)	:	ME Gurney, AM Pauley and J Li
Serial Number	:	09/328,877
Filed	:	9 June 1999
For	:	Human Sel-10 Polypeptides and Polynucleotides that Encode Them

Commissioner of Patents and Trademarks
Washington, DC 20231

Sir:

This is in response to the office action mailed 14 June 2001 in the above-identified application, the shortened statutory period for response being until 14 July 2001. A request for a one month extension of time for response is included herewith to extend the period for response to 14 August 2001.

Election

Group XIV is provisionally elected with traverse.

Background

The Examiner initially issued a four way restriction requirment asserting that claims directed to I. polynucleotides, II. polypeptides, III. antibodies and IV. methods of identifying agents were distinct. Applicant responded by electing group II with traverse. The Examiner responded by vacating the previously issued restriction requirement and imposed a <u>34 way</u> restriction requirement.
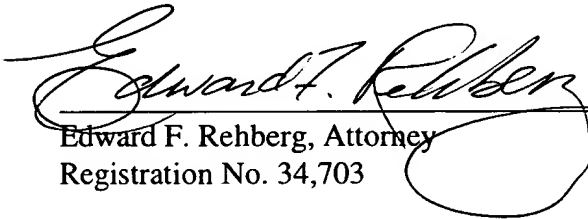
Traversal of the Restriction Requirement

The Applicant would point the Examiner to MPEP 803.04 and 2434 which indicates that a reasonable number of nucleotide and amino acid sequences are permitted to be claimed in an application.

Applicant would submit that the most recently imposed restriction requirement is decidedly *un*reasonable. Applicant's submit that the sequences in the present application are so interrelated as to be easily searched together without undue burden on the Patent Office. Applicant's have aligned the nucleic acid sequences of the mammary and hippocampal forms of sel-10 so that the examiner may appreciate this fact. In addition the Applicants have aligned SEQ ID NOS:1-10 so that the Examiner may appreciate their considerable degree of identity.

Applicants would respectfully submit that at the very least the previous four way restriction requirement should be reinstated but would also respectfully request that the examiner address the traversal in the previously filed papers.

Respectfully submitted,

Date: *8-14-2001*

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Untitled

─── Section 1

```
            (1) 1          10         20        30         40          53
hmsel-10    (1) CTCAGCAGGTCAGGACATTTGGTAGGGGAAGGTTGAAAGACAAAAGCAGCAGG
hhSel-10    (1) ----------CTCATTATTCCCTCGAGTTC--TTCTCAGTCAA--GCTGCATG
Consensus   (1)          C        ATT   T G  G       TT    AG CAA   GC GCA G
```

─── Section 2

```
           (54) 54       60          70         80         90          106
hmsel-10   (54) CCTTGGGTTCTCAGCCTTTTAAAAACTATTATTAAATATATATTTTTAAAATT
hhSel-10   (40) TAT--GTATGTGTGTCCCGAGAAGCGGTTTGATACTGAGCTGCATTTGCC-TT
Consensus  (54)   T  G  T T  G C     AA      TT   TA  A  T    TTT    TT
```

─── Section 3

```
          (107) 107        120        130        140          159
hmsel-10  (107) TAGTGGTTAGAGCTTTTAGTAATGTGCCTGTATTACATGTAGAGAGTATTCGT
hhSel-10   (90) TACTG--TGGAG-TTTTGTTGCCGGTTCTGC-TCCCTAATCTTCCTTTTCTGA
Consensus (107) TA TG   T GAG TTTT  T   G   CTG  T  C  T     T T   G
```

─── Section 4

```
          (160) 160        170        180        190        200          212
hmsel-10  (160) CAACCAAGAGGAGTTTTAAAATGTCAAAACCGGGA-AAACCTACTCTAAACCA
hhSel-10  (139) CGTGCCTGAGCA-TGTCCACAT-TAGAATCTGTGACATACCTAC-CTGAAAAA
Consensus (160) C   C   GAG A T T   A AT T   AA C G GA A ACCTAC CT AA   A
```

─── Section 5

```
          (213) 213      220        230        240        250          265
hmsel-10  (212) TGGCTTGGTTCCTGTTGATCTTAAAAGTGCAAAAGAGCCTCTACCACATCAAA
hhSel-10  (189) GGTTTATATTGTCAGAGACTGCCAAGCAGCCGGACACACGGGGGCACAG-AAT
Consensus (213)  G T   TT      GA     AA    GC  A  C      CACA    AA
```

─── Section 6

```
          (266) 266          280        290        300          318
hmsel-10  (265) CCGTGATGAAGATATTTAGCATTAGCATCATTGCCCAAGGC--CTCCCTTTTT
hhSel-10  (241) CACTGAAGGGGAAAAATACAGAAAATATGGGTTTCTACGGCACATTAAAAATG
Consensus (266) C   TGA G  GA A  TA     A  AT  T  C A GGC   T       T
```

─── Section 7

```
          (319) 319          330        340        350        360          371
hmsel-10  (316) GTCGAAGACGGA-TGAAAAGAAAGTTGGACCATGGTTCTGAGGTCCGCTCTTT
hhSel-10  (294) ATTTTTTACAAAATGAAAAGAAAGTTGGACCATGGTTCTGAGGTCCGCTCTTT
Consensus (319)  T      AC  A TGAAAAGAAAGTTGGACCATGGTTCTGAGGTCCGCTCTTT
```

─── Section 8

```
          (372) 372        380        390        400        410          424
hmsel-10  (368) TTCTTTGGGAAAGAAACCATGCAAAGTCTCAGAATATACAAGTACCACTGGGC
hhSel-10  (347) TTCTTTGGGAAAGAAACCATGCAAAGTCTCAGAATATACAAGTACCACTGGGC
Consensus (372) TTCTTTGGGAAAGAAACCATGCAAAGTCTCAGAATATACAAGTACCACTGGGC
```

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—— Section 9

```
          (425) 425     430        440        450        460            477
hmsel-10  (421) TTGTACCATGTTCAGCAACACCAACAACTTTTGGGGACCTCAGAGCAGCCAAT
hhSel-10  (400) TTGTACCATGTTCAGCAACACCAACAACTTTTGGGGACCTCAGAGCAGCCAAT
Consensus (425) TTGTACCATGTTCAGCAACACCAACAACTTTTGGGGACCTCAGAGCAGCCAAT
```

—— Section 10

```
          (478) 478          490        500        510       520     530
hmsel-10  (474) GGCCAAGGGCAACAACGACGCCGAATTACATCTGTCCAGGCACCTACAGGCCT
hhSel-10  (453) GGCCAAGGGCAACAACGACGCCGAATTACATCTGTCCAGCCACGTACAGGCCT
Consensus (478) GGCCAAGGGCAACAACGACGCCGAATTACATCTGTCCAGCCACCTACAGGCCT
```

—— Section 11

```
          (531) 531        540        550        560        570        583
hmsel-10  (527) CCAGGAATGGCTAAAAATGTTTCAGAGCTGGAGTGGACCAGAGAAATTGCTTG
hhSel-10  (506) CCAGGAATGGCTAAAAATGTTTCAGAGCTGGAGTGGACCAGAGAAATTGCTTG
Consensus (531) CCAGGAATGGCTAAAAATGTTTCAGAGCTGGAGTGGACCAGAGAAATTGCTTG
```

—— Section 12

```
          (584) 584     590        600        610        620        636
hmsel-10  (580) CTTTAGATGAACTCATTGATAGTTGTGAACCAACACAAGTAAAACATATGATG
hhSel-10  (559) CTTTAGATGAACTCATTGATAGTTGTGAACCAACACAAGTAAAACATATGATG
Consensus (584) CTTTAGATGAACTCATTGATAGTTGTGAACCAACACAAGTAAAACATATGATG
```

—— Section 13

```
          (637) 637          650        660        670            689
hmsel-10  (633) CAAGTGATAGAACCCCAGTTTCAACGAGACTTCATTTCATTGCTCCCTAAAGA
hhSel-10  (612) CAAGTGATAGAACCCCAGTTTCAACGAGACTTCATTTCATTGCTCCCTAAAGA
Consensus (637) CAAGTGATAGAACCCCAGTTTCAACGAGACTTCATTTCATTGCTCCCTAAAGA
```

—— Section 14

```
          (690) 690        700        710        720        730        742
hmsel-10  (686) GTTGGCACTCTATGTGCTTTCATTCCTGGAACGCAAAGACCTGCTACAAGCAG
hhSel-10  (665) GTTGGCACTCTATGTGCTTTCATTCCTGGAACCCAAAGACCTGCTACAAGCAG
Consensus (690) GTTGGCACTCTATGTGCTTTCATTCCTGGAACCCAAAGACCTGCTACAAGCAG
```

—— Section 15

```
          (743) 743     750        760        770        780            795
hmsel-10  (739) CTCAGACATGTCGCTACTGGAGAATTTTGGCTGAAGACAACCTTCTCTGGAGA
hhSel-10  (718) CTCAGACATGTCGCTACTGGAGAATTTTGGCTGAAGACAACCTTCTCTGGAGA
Consensus (743) CTCAGACATGTCGCTACTGGAGAATTTTGGCTGAAGACAACCTTCTCTGGAGA
```

—— Section 16

```
          (796) 796          810        820        830            848
hmsel-10  (792) GAGAAATGCAAAGAAGAGGGGATTGATGAACCATTGCACATCAAGAGAAGAAA
hhSel-10  (771) GAGAAATGCAAAGAAGAGGGGATTGATGAACCATTGCACATCAAGAGAAGAAA
Consensus (796) GAGAAATGCAAAGAAGAGGGGATTGATGAACCATTGCACATCAAGAGAAGAAA
```

—— Section 17

```
            (849) 849          860          870          880          890          901
hmsel-10    (845) AGTAATAAAACCAGGTTTCATACACAGTCCATGGAAAAGTGCATACATCAGAC
hhSel-10    (824) AGTAATAAAACCAGGTTTCATACACAGTCCATGGAAAAGTGCATACATCAGAC
Consensus   (849) AGTAATAAAACCAGGTTTCATACACAGTCCATGGAAAAGTGCATACATCAGAC
```

—— Section 18

```
            (902) 902      910          920          930          940          954
hmsel-10    (898) AGCACAGAATTGATACTAACTGGAGGCGAGGAGAACTCAAATCTCCTAAGGTG
hhSel-10    (877) AGCACAGAATTGATACTAACTGGAGGCGAGGAGAACTCAAATCTCCTAAGGTG
Consensus   (902) AGCACAGAATTGATACTAACTGGAGGCGAGGAGAACTCAAATCTCCTAAGGTG
```

—— Section 19

```
            (955) 955      960          970          980          990          1007
hmsel-10    (951) CTGAAAGGACATGATGATCATGTGATCACATGCTTACAGTTTTGTGGTAACCG
hhSel-10    (930) CTGAAAGGACATGATGATCATGTGATCACATGCTTACAGTTTTGTGGTAACCG
Consensus   (955) CTGAAAGGACATGATGATCATGTGATCACATGCTTACAGTTTTGTGGTAACCG
```

—— Section 20

```
           (1008) 1008         1020         1030         1040         1050         1060
hmsel-10   (1004) AATAGTTAGTGGTTGTGATGACAACACTTTAAAAGTTTGGTCAGCAGTCACAG
hhSel-10    (983) AATAGTTAGTGGTTCTGATGACAACACTTTAAAAGTTTGGTCAGCAGTCACAG
Consensus  (1008) AATAGTTAGTGGTTCTGATGACAACACTTTAAAAGTTTGGTCAGCAGTCACAG
```

—— Section 21

```
           (1061) 1061         1070         1080         1090         1100         1113
hmsel-10   (1057) GCAAATGTCTGAGAACATTAGTGGGACATACAGGTGGAGTATGGTCATCACAA
hhSel-10   (1036) GCAAATGTCTGAGAACATTAGTGGGACATACAGGTGGAGTATGGTCATCACAA
Consensus  (1061) GCAAATGTCTGAGAACATTAGTGGGACATACAGGTGGAGTATGGTCATCACAA
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—— Section 22

```
           (1114) 1114    1120         1130         1140         1150         1166
hmsel-10   (1110) ATGAGAGACAACATCATCATTAGTGGATCTACAGATCGGACACTCAAAGTGTG
hhSel-10   (1089) ATGAGAGACAACATCATCATTAGTGGATCTACAGATCGGACACTCAAAGTGTG
Consensus  (1114) ATGAGAGACAACATCATCATTAGTGGATCTACAGATCGGACACTCAAAGTGTG
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—— Section 23

```
           (1167) 1167         1180         1190         1200         1219
hmsel-10   (1163) GAATGCAGAGACTGGAGAATGTATACACACCTTATATGGGCATACTTCCACTG
hhSel-10   (1142) GAATGCAGAGACTGGAGAATGTATACACACCTTATATGGGCATACTTCCACTG
Consensus  (1167) GAATGCAGAGACTGGAGAATGTATACACACCTTATATGGGCATACTTCCACTG
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—— Section 24

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           (1220) 1220         1230         1240         1250         1260         1272
hmsel-10   (1216) TGCGTTGTATGCATCTTCATGAAAAAAGAGTTGTTAGCGGTTCTCGAGATGCC
hhSel-10   (1195) TGCGTTGTATGCATCTTCATGAAAAAAGAGTTGTTAGCGGTTCTCGAGATGCC
Consensus  (1220) TGCGTTGTATGCATCTTCATGAAAAAAGAGTTGTTAGCGGTTCTCGAGATGCC
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                                                                    Section 25
    (1273) 1273      1280         1290         1300        1310         1325
hmsel-10 (1269) ACTCTTAGGGTTTGGGATATTGAGACAGGCCAGTGTTTACATGTTTTGATGGG
hhSel-10 (1248) ACTCTTAGGGTTTGGGATATTGAGACAGGCCAGTGTTTACATGTTTTGATGGG
Consensus (1273) ACTCTTAGGGTTTGGGATATTGAGACAGGCCAGTGTTTACATGTTTTGATGGG
                                                                    Section 26
    (1326) 1326                 1340        1350        1360          1378
hmsel-10 (1322) TCATGTTGCAGCAGTCCGCTGTGTTCAATATGATGGCAGGAGGGTTGTTAGTG
hhSel-10 (1301) TCATGTTGCAGCAGTCCGCTGTGTTCAATATGATGGCAGGAGGGTTGTTAGTG
Consensus (1326) TCATGTTGCAGCAGTCCGCTGTGTTCAATATGATGGCAGGAGGGTTGTTAGTG
                                                                    Section 27
    (1379) 1379          1390        1400         1410        1420      1431
hmsel-10 (1375) GAGCATATGATTTTATGGTAAAGGTGTGGGATCCAGAGACTGAAACCTGTCTA
hhSel-10 (1354) GAGCATATGATTTTATGGTAAAGGTGTGGGATCCAGAGACTGAAACCTGTCTA
Consensus (1379) GAGCATATGATTTTATGGTAAAGGTGTGGGATCCAGAGACTGAAACCTGTCTA
                                                                    Section 28
    (1432) 1432     1440        1450         1460          1470        1484
hmsel-10 (1428) CACACGTTGCAGGGGCATACTAATAGAGTCTATTCATTACAGTTTGATGGTAT
hhSel-10 (1407) CACACGTTGCAGGGGCATACTAATAGAGTCTATTCATTACAGTTTGATGGTAT
Consensus (1432) CACACGTTGCAGGGGCATACTAATAGAGTCTATTCATTACAGTTTGATGGTAT
                                                                    Section 29
    (1485) 1485   1490        1500         1510        1520           1537
hmsel-10 (1481) CCATGTGGTGAGTGGATCTCTTGATACATCAATCCGTGTTTGGGATGTGGAGA
hhSel-10 (1460) CCATGTGGTGAGTGGATCTCTTGATACATCAATCCGTGTTTGGGATGTGGAGA
Consensus (1485) CCATGTGGTGAGTGGATCTCTTGATACATCAATCCGTGTTTGGGATGTGGAGA
                                                                    Section 30
    (1538) 1538          1550        1560        1570        1580      1590
hmsel-10 (1534) CAGGGAATTGCATTCACACGTTAACAGGGCACCAGTCGTTAACAAGTGGAATG
hhSel-10 (1513) CAGGGAATTGCATTCACACGTTAACAGGGCACCAGTCGTTAACAAGTGGAATG
Consensus (1538) CAGGGAATTGCATTCACACGTTAACAGGGCACCAGTCGTTAACAAGTGGAATG
                                                                    Section 31
    (1591) 1591       1600         1610        1620         1630       1643
hmsel-10 (1587) GAACTCAAAGACAATATTCTTGTCTCTGGGAATGCAGATTCTACAGTTAAAAT
hhSel-10 (1566) GAACTCAAAGACAATATTCTTGTCTCTGGGAATGCAGATTCTACAGTTAAAAT
Consensus (1591) GAACTCAAAGACAATATTCTTGTCTCTGGGAATGCAGATTCTACAGTTAAAAT
                                                                    Section 32
    (1644) 1644    1650          1660         1670        1680         1696
hmsel-10 (1640) CTGGGATATCAAAACAGGACAGTGTTTACAAACATTGCAAGGTCCCAACAAGC
hhSel-10 (1619) CTGGGATATCAAAACAGGACAGTGTTTACAAACATTGCAAGGTCCCAACAAGC
Consensus (1644) CTGGGATATCAAAACAGGACAGTGTTTACAAACATTGCAAGGTCCCAACAAGC
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——— Section 33

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           (1697) 1697           ,1710      ,1720      ,1730              1749
   hmsel-10 (1693) ATCAGAGTGCTGTGACCTGTTTACAGTTCAACAAGAACTTTGTAATTACCAGC
    hhSel-10 (1672) ATCAGAGTGCTGTGACCTGTTTACAGTTCAACAAGAACTTTGTAATTACCAGC
Consensus (1697) ATCAGAGTGCTGTGACCTGTTTACAGTTCAACAAGAACTTTGTAATTACCAGC
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——— Section 34

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           (1750) 1750       ,1760        ,1770       ,1780         ,1790    1802
   hmsel-10 (1746) TCAGATGATGGAACTGTAAAACTATGGGACTTGAAAACGGGTGAATTTATTCG
    hhSel-10 (1725) TCAGATGATGGAACTGTAAAACTATGGGACTTGAAAACGGGTGAATTTATTCG
Consensus (1750) TCAGATGATGGAACTGTAAAACTATGGGACTTGAAAACGGGTGAATTTATTCG
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——— Section 35

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           (1803) 1803    ,1810       ,1820        ,1830        ,1840     1855
   hmsel-10 (1799) AAACCTAGTCACATTGGAGAGTGGGGGGAGTGGGGGAGTTGTGTGGCGGATCA
    hhSel-10 (1778) AAACCTAGTCACATTGGAGAGTGGGGGGAGTGGGGGAGTTGTGTGGCGGATCA
Consensus (1803) AAACCTAGTCACATTGGAGAGTGGGGGGAGTGGGGGAGTTGTGTGGCGGATCA
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——— Section 36

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           (1856) 1856          ,1870       ,1880       ,1890          1908
   hmsel-10 (1852) GAGCCTCAAACACAAAGCTGGTGTGTGCAGTTGGGAGTCGGAATGGGACTGAA
    hhSel-10 (1831) GAGCCTCAAACACAAAGCTGGTGTGTGCAGTTGGGAGTCGGAATGGGACTGAA
Consensus (1856) GAGCCTCAAACACAAAGCTGGTGTGTGCAGTTGGGAGTCGGAATGGGACTGAA
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——— Section 37

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           (1909) 1909        ,1920       ,1930       ,1940        ,1950    1961
   hmsel-10 (1905) GAAACCAAGCTGCTGGTGCTGGACTTTGATGTGGACATGAAGTGAAGAGCAGA
    hhSel-10 (1884) GAAACCAAGCTGCTGGTGCTGGACTTTGATGTGGACATGAAGTGAAGAGCAGA
Consensus (1909) GAAACCAAGCTGCTGGTGCTGGACTTTGATGTGGACATGAAGTGAAGAGCAGA
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——— Section 38

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           (1962) 1962     ,1970       ,1980       ,1990       2000      2014
   hmsel-10 (1958) AAAGATGAATTTGTCCAATTGTGTAGACGATATACTCCCTGCCCTTCCCCCTG
    hhSel-10 (1937) AAAGATGAATTTGTCCAATTGTGTAGACGATATACTCCCTGCCCTTCCCCCTG
Consensus (1962) AAAGATGAATTTGTCCAATTGTGTAGACGATATACTCCCTGCCCTTCCCCCTG
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——— Section 39

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           (2015) 2015   2020         2030        2040        2050       2067
   hmsel-10 (2011) CAAAAAGAAAAAAAGAAAAGAAAAAGAAAAAAATCCCTTGTTCTCAGTGGTGC
    hhSel-10 (1990) CAAAAAGAAAAAAAGAAAAGAAAAAGAAAAAAATCCCTTGTTCTCAGTGGTGC
Consensus (2015) CAAAAAGAAAAAAAGAAAAGAAAAAGAAAAAAATCCCTTGTTCTCAGTGGTGC
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——— Section 40

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           (2068) 2068        2080        2090        2100       2110     2120
   hmsel-10 (2064) AGGATGTTGGCTTGGGGCAACAGATTGAAAAGACCTACAGACTAAGAAGGAAA
    hhSel-10 (2043) AGGATGTTGGCTTGGGGCAACAGATTGAAAAGACCTACAGACTAAGAAGGAAA
Consensus (2068) AGGATGTTGGCTTGGGGCAACAGATTGAAAAGACCTACAGACTAAGAAGGAAA
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                                                                    ——————— Section 41
        (2121) 2121        2130         2140        2150        2160        2173
hmsel-10 (2117) AGAAGAAGAGATGACAAACCATAACTGACAAGAGAGGCGTCTGCTGTCTCATC
hhSel-10 (2096) AGAAGAAGAGATGACAAACCATAACTGACAAGAGAGGCGTCTGCTGTCTCATC
Consensus (2121) AGAAGAAGAGATGACAAACCATAACTGACAAGAGAGGCGTCTGCTGTCTCATC
                                                                    ——————— Section 42
        (2174) 2174    2180        2190        2200        2210        2226
hmsel-10 (2170) ACATAAAAGGCTTCACTTTTGACTGAGGGCAGCTTTGCAAAATGAGACTTTCT
hhSel-10 (2149) ACATAAAAGGCTTCACTTTTGACTGAGGGCAGCTTTGCAAAATGAGACTTTCT
Consensus (2174) ACATAAAAGGCTTCACTTTTGACTGAGGGCAGCTTTGCAAAATGAGACTTTCT
                                                                    ——————— Section 43
        (2227) 2227            2240        2250        2260        2279
hmsel-10 (2223) AAATCAAACCAGGTGCAATTATTTCTTTATTTTCTTCTCCAGTGGTCATTGGG
hhSel-10 (2202) AAATCAAACCAGGTGCAATTATTTCTTTATTTTCTTCTCCAGTGGTCATTGGG
Consensus (2227) AAATCAAACCAGGTGCAATTATTTCTTTATTTTCTTCTCCAGTGGTCATTGGG
                                                                    ——————— Section 44
        (2280) 2280        2290        2300        2310        2320        2332
hmsel-10 (2276) GCAGTGTTAATGCTGAAACATCATTACAGATTCTGCTAGCCTGTTCTTTTACC
hhSel-10 (2255) GCAGTGTTAATGCTGAAACATCATTACAGATTCTGCTAGCCTGTTCTTTTACC
Consensus (2280) GCAGTGTTAATGCTGAAACATCATTACAGATTCTGCTAGCCTGTTCTTTTACC
                                                                    ——————— Section 45
        (2333) 2333    2340        2350        2360        2370        2385
hmsel-10 (2329) ACTGACAGCTAGACACCTAGAAAGGAACTGCAATAATATCAAAACAAGTACTG
hhSel-10 (2308) ACTGACAGCTAGACACCTAGAAAGGAACTGCAATAATATCAAAACAAGTACTG
Consensus (2333) ACTGACAGCTAGACACCTAGAAAGGAACTGCAATAATATCAAAACAAGTACTG
                                                                    ——————— Section 46
        (2386) 2386            2400        2410        2420        2438
hmsel-10 (2382) GTTGACTTTCTAATTAGAGAGCATCTGCAACAAAAAGTCATTTTTCTGGAGTG
hhSel-10 (2361) GTTGACTTTCTAATTAGAGAGCATCTGCAACAAAAAGTCATTTTTCTGGAGTG
Consensus (2386) GTTGACTTTCTAATTAGAGAGCATCTGCAACAAAAAGTCATTTTTCTGGAGTG
                                                                    ——————— Section 47
        (2439) 2439        2450        2460        2470        2480        2491
hmsel-10 (2435) GAAAAGCTTAAAAAAATTACTGTGAATTGTTTTTGTACAGTTATCATGAAAAG
hhSel-10 (2414) GAAAAGCTTAAAAAAATTACTGTGAATTGTTTTTGTACAGTTATCATGAAAAG
Consensus (2439) GAAAAGCTTAAAAAAATTACTGTGAATTGTTTTTGTACAGTTATCATGAAAAG
                                                                    ——————— Section 48
        (2492) 2492    2500        2510        2520        2530        2544
hmsel-10 (2488) CTTTTTTTTTTATTTTTTTNGCCAACCATTGCCAATGTCAATCAATGACAGTAT
hhSel-10 (2467) CTTTTTTTTTTATTTTTTTNGCCAACCATTGCCAATGTCAATCAATCACAGTAT
Consensus (2492) CTTTTTTTTTTATTTTTTTNGCCAACCATTGCCAATGTCAATCAATCACAGTAT
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——— Section 49

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              (2545) 2545   2550        2560       2570       2580            2597
   hmsel-10 (2541) TAGCCTCTGTTAATCTATTTACTGTTGCTTCCATATACATTCTTCAATGCATA
   hhSel-10 (2520) TAGCCTCTGTTAATCTATTTACTGTTGCTTCCATATACATTCTTCAATGCATA
Consensus (2545) TAGCCTCTGTTAATCTATTTACTGTTGCTTCCATATACATTCTTCAATGCATA
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——— Section 50

```
              (2598) 2598         2610      2620       2630       2640        2650
   hmsel-10 (2594) TGTTGCTCAAAGGTGGCAAGTTGTCCTGGGTTCTGTGAGTCCTGAGATGGATT
   hhSel-10 (2573) TGTTGCTCAAAGGTGGCAAGTTGTCCTGGGTTCTGTGAGTCCTGAGATGGATT
Consensus (2598) TGTTGCTCAAAGGTGGCAAGTTGTCCTGGGTTCTGTGAGTCCTGAGATGGATT
```

——— Section 51

```
              (2651) 2651       2660       2670       2680       2690         2703
   hmsel-10 (2647) TAATTCTTGATGCTGGTGCTAGAAGTAGGTCTTCAAATATGGGATTGTTGTCC
   hhSel-10 (2626) TAATTCTTGATGCTGGTGCTAGAAGTAGGTCTTCAAATATGGGATTGTTGTCC
Consensus (2651) TAATTCTTGATGCTGGTGCTAGAAGTAGGTCTTCAAATATGGGATTGTTGTCC
```

——— Section 52

```
              (2704) 2704   2710       2720       2730       2740            2756
   hmsel-10 (2700) CAACCCTGTACTGTACTCCCAGTGGCCAAACTTATTTATGCTGCTAAATGAAA
   hhSel-10 (2679) CAACCCTGTACTGTACTCCCAGTGGCCAAACTTATTTATGCTGCTAAATGAAA
Consensus (2704) CAACCCTGTACTGTACTCCCAGTGGCCAAACTTATTTATGCTGCTAAATGAAA
```

——— Section 53

```
              (2757) 2757          2770       2780       2790               2809
   hmsel-10 (2753) GAAAGAAAAAAGCAAATTATTTTTTTTATTTTTTTTCTGCTGTGACGTTTTAG
   hhSel-10 (2732) GAAAGAAAAAAGCAAATTATTTTTTTTATTTTTTTTCTGCTGTGACGTTTTAG
Consensus (2757) GAAAGAAAAAAGCAAATTATTTTTTTTATTTTTTTTCTGCTGTGACGTTTTAG
```

——— Section 54

```
              (2810) 2810       2820       2830       2840       2850         2862
   hmsel-10 (2806) TCCCAGACTGAATTCCAAATTTGCTCTAGTTTGGTTATGGAAAAAAGACTTTT
   hhSel-10 (2785) TCCCAGACTGAATTCCAAATTTGCTCTAGTTTGGTTATGGAAAAAAGACTTTT
Consensus (2810) TCCCAGACTGAATTCCAAATTTGCTCTAGTTTGGTTATGGAAAAAAGACTTTT
```

——— Section 55

```
              (2863) 2863    2870       2880       2890       2900            2915
   hmsel-10 (2859) TGCCACTGAAACTTGAGCCATCTGTGCCTCTAAGAGGCTGAGAATGGAAGAGT
   hhSel-10 (2838) TGCCACTGAAACTTGAGCCATCTGTGCCTCTAAGAGGCTGAGAATGGAAGAGT
Consensus (2863) TGCCACTGAAACTTGAGCCATCTGTGCCTCTAAGAGGCTGAGAATGGAAGAGT
```

——— Section 56

```
              (2916) 2916        2930       2940       2950                  2968
   hmsel-10 (2912) TTCAGATAATAAAGAGTGAAGTTTGCCTGCAAGTAAAGAATTGAGAGTGTGTG
   hhSel-10 (2891) TTCAGATAATAAAGAGTGAAGTTTGCCTGCAAGTAAAGAATTGAGAGTGTGTG
Consensus (2916) TTCAGATAATAAAGAGTGAAGTTTGCCTGCAAGTAAAGAATTGAGAGTGTGTG
```

——— Section 57

```
          (2969) 2969        2980        2990        3000        3010     3021
 hmsel-10 (2965) CAAAGCTTATTTTCTTTTATCTGGGCAAAAATTAAAACACATTCCTTGGAACA
  hhSel-10 (2944) CAAAGCTTATTTTCTTTTATCTGGGCAAAAATTAAAACACATTCCTTGGAACA
Consensus (2969) CAAAGCTTATTTTCTTTTATCTGGGCAAAAATTAAAACACATTCCTTGGAACA
```

——— Section 58

```
          (3022) 3022      3030        3040        3050        3060       3074
 hmsel-10 (3018) GAGCTATTACTTGCCTGTTCTGTGGAGAAACTTTTCTTTTTGAGGGCTGTGGT
  hhSel-10 (2997) GAGCTATTACTTGCCTGTTCTGTGGAGAAACTTTTCTTTTTGAGGGCTGTGGT
Consensus (3022) GAGCTATTACTTGCCTGTTCTGTGGAGAAACTTTTCTTTTTGAGGGCTGTGGT
```

——— Section 59

```
          (3075) 3075  3080        3090        3100        3110           3127
 hmsel-10 (3071) GAATGGATGAACGTACATCGTAAAACTGACAAAATATTTTAAAAATATATAAA
  hhSel-10 (3050) GAATGGATGAACGTACATCGTAAAACTGACAAAATATTTTAAAAATATATAAA
Consensus (3075) GAATGGATGAACGTACATCGTAAAACTGACAAAATATTTTAAAAATATATAAA
```

——— Section 60

```
          (3128) 3128        3140        3150        3160        3170      3180
 hmsel-10 (3124) ACACAAAATTAAAATAAAGTTGCTGGTCAGTCTTAGTGTTTTACAGTATTTGG
  hhSel-10 (3103) ACACAAAATTAAAATAAAGTTGCTGGTCAGTCTTAGTGTTTTACAGTATTTGG
Consensus (3128) ACACAAAATTAAAATAAAGTTGCTGGTCAGTCTTAGTGTTTTACAGTATTTGG
```

——— Section 61

```
          (3181) 3181       3190        3200        3210        3220       3233
 hmsel-10 (3177) GAAAACAACTGTTACAGTTTTTATTGCTCTGAGTAACTGACAAAGCAGAAACTA
  hhSel-10 (3156) GAAAACAACTGTTACAGTTTTTATTGCTCTGAGTAACTGACAAAGCAGAAACTA
Consensus (3181) GAAAACAACTGTTACAGTTTTTATTGCTCTGAGTAACTGACAAAGCAGAAACTA
```

——— Section 62

```
          (3234) 3234  3240        3250        3260        3270           3286
 hmsel-10 (3230) TTCAGTTTTTGTAGTAAAGGCGTCACATGCAAACAAACAAAATGAATGAAACA
  hhSel-10 (3209) TTCAGTTTTTGTAGTAAAGGCGTCACATGCAAACAAACAAAATGAATGAAACA
Consensus (3234) TTCAGTTTTTGTAGTAAAGGCGTCACATGCAAACAAACAAAATGAATGAAACA
```

——— Section 63

```
          (3287) 3287        3300        3310        3320              3339
 hmsel-10 (3283) GTCAAATGGTTTGCCTCATTCTCCAAGAGCCACAACTCAAGCTGAACTGTGAA
  hhSel-10 (3262) GTCAAATGGTTTGCCTCATTCTCCAAGAGCCACAACTCAAGCTGAACTGTGAA
Consensus (3287) GTCAAATGGTTTGCCTCATTCTCCAAGAGCCACAACTCAAGCTGAACTGTGAA
```

——— Section 64

```
          (3340) 3340        3350        3360        3370        3380      3392
 hmsel-10 (3336) AGTGGTTTAACACTGTATCCTAGGCGATCTTTTTTTCCTCCTTCTGTTTATTTT
  hhSel-10 (3315) AGTGGTTTAACACTGTATCCTAGGCGATCTTTTTTTCCTCCTTCTGTTTATTTT
Consensus (3340) AGTGGTTTAACACTGTATCCTAGGCGATCTTTTTTTCCTCCTTCTGTTTATTTT
```

```
─────────────────────────────────────────────────────────────────────── Section 65
        (3393) 3393      3400        3410        3420        3430         3445
   hmsel-10 (3389) TTTGNTTGTTTTATTTATAGTCTGATTTAAAACAATCAGATTCAAGTTGGTTA
   hhSel-10 (3368) TTTGNTTGTTTTATTTATAGTCTGATTTAAAACAATCAGATTCAAGTTGGTTA
Consensus (3393) TTTGNTTGTTTTATTTATAGTCTGATTTAAAACAATCAGATTCAAGTTGGTTA
─────────────────────────────────────────────────────────────────────── Section 66
        (3446) 3446            3460        3470        3480            3498
   hmsel-10 (3442) ATTTTAGTTATGTAACAACCTGACATGATGGAGGAAAACAACCTTTAAAGGGA
   hhSel-10 (3421) ATTTTAGTTATGTAACAACCTGACATGATGGAGGAAAACAACCTTTAAAGGGA
Consensus (3446) ATTTTAGTTATGTAACAACCTGACATGATGGAGGAAAACAACCTTTAAAGGGA
─────────────────────────────────────────────────────────────────────── Section 67
        (3499) 3499        3510        3520        3530        3540      3551
   hmsel-10 (3495) TTGTGTCTATGGTTTGATTCACTTAGAAATTTTATTTTCTTATAACTTAAGTG
   hhSel-10 (3474) TTGTGTCTATGGTTTGATTCACTTAGAAATTTTATTTTCTTATAACTTAAGTG
Consensus (3499) TTGTGTCTATGGTTTGATTCACTTAGAAATTTTATTTTCTTATAACTTAAGTG
─────────────────────────────────────────────────────────────────────── Section 68
        (3552) 3552      3560        3575
   hmsel-10 (3548) CAATAAAATGTGTTTTTTCATGTT
   hhSel-10 (3527) CAATAAAATGTGTTTTTTCATGTT
Consensus (3552) CAATAAAATGTGTTTTTTCATGTT
```

—— Section 1

```
              (1) 1          10         20         30         40         53
hhSel-10-(1) 3 (1) MCVPRSGLILSCICLYCGVLLPVLLPNLPFLTCLSMSTLESVTYLPEKGLYCQ
hhSel-10-(2) 4 (1) -----------------------------------MSTLESVTYLPEKGLYCQ
hhSel-10-(3) 5 (1) ---------------------------------------------------
hhSel-10-(4) 6 (1) ---------------------------------------------------
hhSel-10-(5) 7 (1) ---------------------------------------------------
hmsel-10-(1) 8 (1) -------------------------------------MSKPGKPTLNHGLVP
hmsel-10-(2) 9 (1) ---------------------------------------------------
hmsel-10-(3) 10(1) ---------------------------------------------------
Consensus    (1)
```

—— Section 2

```
            (54) 54      60         70         80         90         106
hhSel-10-(1)(54) RLPSSRTHGGTESLKGKNTENMGFYGTLKMIFYKMKRKLDHGSEVRSFSLGKK
hhSel-10-(2)(19) RLPSSRTHGGTESLKGKNTENMGFYGTLKMIFYKMKRKLDHGSEVRSFSLGKK
hhSel-10-(3) (1) ---------------------MGFYGTLKMIFYKMKRKLDHGSEVRSFSLGKK
hhSel-10-(4) (1) ------------------------------MIFYKMKRKLDHGSEVRSFSLGKK
hhSel-10-(5) (1) ------------------------------MIFYKMKRKLDHGSEVRSFSLGKK
hmsel-10-(1)(16) VDLKSAKEPLPHQTVMKIFSISIIAQGLPFCRRRMKRKLDHGSEVRSFSLGKK
hmsel-10-(2) (1) ---------------MKIFSISIIAQGLPFCRRRMKRKLDHGSEVRSFSLGKK
hmsel-10-(3) (1) ------------------------------MKRKLDHGSEVRSFSLGKK
Consensus  (54)                 K         L MIFYKMKRKLDHGSEVRSFSLGKK
```

—— Section 3

```
           (107) 107        120        130        140        159
hhSel-10-(1)(107) PCKVSEYTSTTGLVPCSATPTTFGDLRAANGQGQQRRRITSVQPPTGLQEWLK
hhSel-10-(2)(72) PCKVSEYTSTTGLVPCSATPTTFGDLRAANGQGQQRRRITSVQPPTGLQEWLK
hhSel-10-(3)(33) PCKVSEYTSTTGLVPCSATPTTFGDLRAANGQGQQRRRITSVQPPTGLQEWLK
hhSel-10-(4)(25) PCKVSEYTSTTGLVPCSATPTTFGDLRAANGQGQQRRRITSVQPPTGLQEWLK
hhSel-10-(5)(25) PCKVSEYTSTTGLVPCSATPTTFGDLRAANGQGQQRRRITSVQPPTGLQEWLK
hmsel-10-(1)(69) PCKVSEYTSTTGLVPCSATPTTFGDLRAANGQGQQRRRITSVQPPTGLQEWLK
hmsel-10-(2)(39) PCKVSEYTSTTGLVPCSATPTTFGDLRAANGQGQQRRRITSVQPPTGLQEWLK
hmsel-10-(3)(20) PCKVSEYTSTTGLVPCSATPTTFGDLRAANGQGQQRRRITSVQPPTGLQEWLK
Consensus  (107) PCKVSEYTSTTGLVPCSATPTTFGDLRAANGQGQQRRRITSVQPPTGLQEWLK
```

—— Section 4

```
           (160) 160        170        180        190        200        212
hhSel-10-(1)(160) MFQSWSGPEKLLALDELIDSCEPTQVKHMMQVIEPQFQRDFISLLPKELALYV
hhSel-10-(2)(125) MFQSWSGPEKLLALDELIDSCEPTQVKHMMQVIEPQFQRDFISLLPKELALYV
hhSel-10-(3)(86) MFQSWSGPEKLLALDELIDSCEPTQVKHMMQVIEPQFQRDFISLLPKELALYV
hhSel-10-(4)(78) MFQSWSGPEKLLALDELIDSCEPTQVKHMMQVIEPQFQRDFISLLPKELALYV
hhSel-10-(5)(78) MFQSWSGPEKLLALDELIDSCEPTQVKHMMQVIEPQFQRDFISLLPKELALYV
hmsel-10-(1)(122) MFQSWSGPEKLLALDELIDSCEPTQVKHMMQVIEPQFQRDFISLLPKELALYV
hmsel-10-(2)(92) MFQSWSGPEKLLALDELIDSCEPTQVKHMMQVIEPQFQRDFISLLPKELALYV
hmsel-10-(3)(73) MFQSWSGPEKLLALDELIDSCEPTQVKHMMQVIEPQFQRDFISLLPKELALYV
Consensus  (160) MFQSWSGPEKLLALDELIDSCEPTQVKHMMQVIEPQFQRDFISLLPKELALYV
```

——— Section 5

```
                 (213) 213        220        230        240        250        265
hhSel-10-(1)  (213) LSFLEPKDLLQAAQTCRYWRILAEDNLLWREKCKEEGIDEPLHIKRRKVIKPG
hhSel-10-(2)  (178) LSFLEPKDLLQAAQTCRYWRILAEDNLLWREKCKEEGIDEPLHIKRRKVIKPG
hhSel-10-(3)  (139) LSFLEPKDLLQAAQTCRYWRILAEDNLLWREKCKEEGIDEPLHIKRRKVIKPG
hhSel-10-(4)  (131) LSFLEPKDLLQAAQTCRYWRILAEDNLLWREKCKEEGIDEPLHIKRRKVIKPG
hhSel-10-(5)  (131) LSFLEPKDLLQAAQTCRYWRILAEDNLLWREKCKEEGIDEPLHIKRRKVIKPG
hmsel-10-(1)  (175) LSFLEPKDLLQAAQTCRYWRILAEDNLLWREKCKEEGIDEPLHIKRRKVIKPG
hmsel-10-(2)  (145) LSFLEPKDLLQAAQTCRYWRILAEDNLLWREKCKEEGIDEPLHIKRRKVIKPG
hmsel-10-(3)  (126) LSFLEPKDLLQAAQTCRYWRILAEDNLLWREKCKEEGIDEPLHIKRRKVIKPG
Consensus     (213) LSFLEPKDLLQAAQTCRYWRILAEDNLLWREKCKEEGIDEPLHIKRRKVIKPG
```

——— Section 6

```
                 (266) 266            280        290        300        318
hhSel-10-(1)  (266) FIHSPWKSAYIRQHRIDTNWRRGELKSPKVLKGHDDHVITCLQFCGNRIVSGS
hhSel-10-(2)  (231) FIHSPWKSAYIRQHRIDTNWRRGELKSPKVLKGHDDHVITCLQFCGNRIVSGS
hhSel-10-(3)  (192) FIHSPWKSAYIRQHRIDTNWRRGELKSPKVLKGHDDHVITCLQFCGNRIVSGS
hhSel-10-(4)  (184) FIHSPWKSAYIRQHRIDTNWRRGELKSPKVLKGHDDHVITCLQFCGNRIVSGS
hhSel-10-(5)  (184) FIHSPWKSAYIRQHRIDTNWRRGELKSPKVLKGHDDHVITCLQFCGNRIVSGS
hmsel-10-(1)  (228) FIHSPWKSAYIRQHRIDTNWRRGELKSPKVLKGHDDHVITCLQFCGNRIVSGS
hmsel-10-(2)  (198) FIHSPWKSAYIRQHRIDTNWRRGELKSPKVLKGHDDHVITCLQFCGNRIVSGS
hmsel-10-(3)  (179) FIHSPWKSAYIRQHRIDTNWRRGELKSPKVLKGHDDHVITCLQFCGNRIVSGS
Consensus     (266) FIHSPWKSAYIRQHRIDTNWRRGELKSPKVLKGHDDHVITCLQFCGNRIVSGS
```

——— Section 7

```
                 (319) 319        330        340        350        360        371
hhSel-10-(1)  (319) DDNTLKVWSAVTGKCLRTLVGHTGGVWSSQMRDNIIISGSTDRTLKVWNAETG
hhSel-10-(2)  (284) DDNTLKVWSAVTGKCLRTLVGHTGGVWSSQMRDNIIISGSTDRTLKVWNAETG
hhSel-10-(3)  (245) DDNTLKVWSAVTGKCLRTLVGHTGGVWSSQMRDNIIISGSTDRTLKVWNAETG
hhSel-10-(4)  (237) DDNTLKVWSAVTGKCLRTLVGHTGGVWSSQMRDNIIISGSTDRTLKVWNAETG
hhSel-10-(5)  (237) DDNTLKVWSAVTGKCLRTLVGHTGGVWSSQMRDNIIISGSTDRTLKVWNAETG
hmsel-10-(1)  (281) DDNTLKVWSAVTGKCLRTLVGHTGGVWSSQMRDNIIISGSTDRTLKVWNAETG
hmsel-10-(2)  (251) DDNTLKVWSAVTGKCLRTLVGHTGGVWSSQMRDNIIISGSTDRTLKVWNAETG
hmsel-10-(3)  (232) DDNTLKVWSAVTGKCLRTLVGHTGGVWSSQMRDNIIISGSTDRTLKVWNAETG
Consensus     (319) DDNTLKVWSAVTGKCLRTLVGHTGGVWSSQMRDNIIISGSTDRTLKVWNAETG
```

——— Section 8

```
                 (372) 372        380        390        400        410        424
hhSel-10-(1)  (372) ECIHTLYGHTSTVRCMHLHEKRVVSGSRDATLRVWDIETGQCLHVLMGHVAAV
hhSel-10-(2)  (337) ECIHTLYGHTSTVRCMHLHEKRVVSGSRDATLRVWDIETGQCLHVLMGHVAAV
hhSel-10-(3)  (298) ECIHTLYGHTSTVRCMHLHEKRVVSGSRDATLRVWDIETGQCLHVLMGHVAAV
hhSel-10-(4)  (290) ECIHTLYGHTSTVRCMHLHEKRVVSGSRDATLRVWDIETGQCLHVLMGHVAAV
hhSel-10-(5)  (290) ECIHTLYGHTSTVRCMHLHEKRVVSGSRDATLRVWDIETGQCLHVLMGHVAAV
hmsel-10-(1)  (334) ECIHTLYGHTSTVRCMHLHEKRVVSGSRDATLRVWDIETGQCLHVLMGHVAAV
hmsel-10-(2)  (304) ECIHTLYGHTSTVRCMHLHEKRVVSGSRDATLRVWDIETGQCLHVLMGHVAAV
hmsel-10-(3)  (285) ECIHTLYGHTSTVRCMHLHEKRVVSGSRDATLRVWDIETGQCLHVLMGHVAAV
Consensus     (372) ECIHTLYGHTSTVRCMHLHEKRVVSGSRDATLRVWDIETGQCLHVLMGHVAAV
```

--- Section 9

```
              (425)  425    430         440         450         460         477
hhSel-10-(1) (425)  RCVQYDGRRVVSGAYDFMVKVWDPETETCLHTLQGHTNRVYSLQFDGIHVVSG
hhSel-10-(2) (390)  RCVQYDGRRVVSGAYDFMVKVWDPETETCLHTLQGHTNRVYSLQFDGIHVVSG
hhSel-10-(3) (351)  RCVQYDGRRVVSGAYDFMVKVWDPETETCLHTLQGHTNRVYSLQFDGIHVVSG
hhSel-10-(4) (343)  RCVQYDGRRVVSGAYDFMVKVWDPETETCLHTLQGHTNRVYSLQFDGIHVVSG
hhSel-10-(5) (343)  RCVQYDGRRVVSGAYDFMVKVWDPETETCLHTLQGHTNRVYSLQFDGIHVVSG
hmsel-10-(1) (387)  RCVQYDGRRVVSGAYDFMVKVWDPETETCLHTLQGHTNRVYSLQFDGIHVVSG
hmsel-10-(2) (357)  RCVQYDGRRVVSGAYDFMVKVWDPETETCLHTLQGHTNRVYSLQFDGIHVVSG
hmsel-10-(3) (338)  RCVQYDGRRVVSGAYDFMVKVWDPETETCLHTLQGHTNRVYSLQFDGIHVVSG
Consensus    (425)  RCVQYDGRRVVSGAYDFMVKVWDPETETCLHTLQGHTNRVYSLQFDGIHVVSG
```

--- Section 10

```
              (478)  478         490         500         510         520         530
hhSel-10-(1) (478)  SLDTSIRVWDVETGNCIHTLTGHQSLTSGMELKDNILVSGNADSTVKIWDIKT
hhSel-10-(2) (443)  SLDTSIRVWDVETGNCIHTLTGHQSLTSGMELKDNILVSGNADSTVKIWDIKT
hhSel-10-(3) (404)  SLDTSIRVWDVETGNCIHTLTGHQSLTSGMELKDNILVSGNADSTVKIWDIKT
hhSel-10-(4) (396)  SLDTSIRVWDVETGNCIHTLTGHQSLTSGMELKDNILVSGNADSTVKIWDIKT
hhSel-10-(5) (396)  SLDTSIRVWDVETGNCIHTLTGHQSLTSGMELKDNILVSGNADSTVKIWDIKT
hmsel-10-(1) (440)  SLDTSIRVWDVETGNCIHTLTGHQSLTSGMELKDNILVSGNADSTVKIWDIKT
hmsel-10-(2) (410)  SLDTSIRVWDVETGNCIHTLTGHQSLTSGMELKDNILVSGNADSTVKIWDIKT
hmsel-10-(3) (391)  SLDTSIRVWDVETGNCIHTLTGHQSLTSGMELKDNILVSGNADSTVKIWDIKT
Consensus    (478)  SLDTSIRVWDVETGNCIHTLTGHQSLTSGMELKDNILVSGNADSTVKIWDIKT
```

--- Section 11

```
              (531)  531    540         550         560         570         583
hhSel-10-(1) (531)  GQCLQTLQGPNKHQSAVTCLQFNKNFVITSSDDGTVKLWDLKTGEFIRNLVTL
hhSel-10-(2) (496)  GQCLQTLQGPNKHQSAVTCLQFNKNFVITSSDDGTVKLWDLKTGEFIRNLVTL
hhSel-10-(3) (457)  GQCLQTLQGPNKHQSAVTCLQFNKNFVITSSDDGTVKLWDLKTGEFIRNLVTL
hhSel-10-(4) (449)  GQCLQTLQGPNKHQSAVTCLQFNKNFVITSSDDGTVKLWDLKTGEFIRNLVTL
hhSel-10-(5) (449)  GQCLQTLQGPNKHQSAVTCLQFNKNFVITSSDDGTVKLWDLKTGEFIRNLVTL
hmsel-10-(1) (493)  GQCLQTLQGPNKHQSAVTCLQFNKNFVITSSDDGTVKLWDLKTGEFIRNLVTL
hmsel-10-(2) (463)  GQCLQTLQGPNKHQSAVTCLQFNKNFVITSSDDGTVKLWDLKTGEFIRNLVTL
hmsel-10-(3) (444)  GQCLQTLQGPNKHQSAVTCLQFNKNFVITSSDDGTVKLWDLKTGEFIRNLVTL
Consensus    (531)  GQCLQTLQGPNKHQSAVTCLQFNKNFVITSSDDGTVKLWDLKTGEFIRNLVTL
```

--- Section 12

```
              (584)  584    590         600         610         628
hhSel-10-(1) (584)  ESGGSGGVVWRIRASNTKLVCAVGSRNGTEETKLLVLDFDVDMK-
hhSel-10-(2) (549)  ESGGSGGVVWRIRASNTKLVCAVGSRNGTEETKLLVLDFDVDMK-
hhSel-10-(3) (510)  ESGGSGGVVWRIRASNTKLVCAVGSRNGTEETKLLVLDFDVDMK-
hhSel-10-(4) (502)  ESGGSGGVVWRIRASNTKLVCAVGSRNGTEETKLLVLDFDVDMK-
hhSel-10-(5) (502)  ESGGSGGVVWRIRASNTKLVCAVGSRNGTEETKLLVLDFDVDMK-
hmsel-10-(1) (546)  ESGGSGGVVWRIRASNTKLVCAVGSRNGTEETKLLVLDFDVDMK-
hmsel-10-(2) (516)  ESGGSGGVVWRIRASNTKLVCAVGSRNGTEETKLLVLDFDVDMK-
hmsel-10-(3) (497)  ESGGSGGVVWRIRASNTKLVCAVGSRNGTEETKLLVLDFDVDMK-
Consensus    (584)  ESGGSGGVVWRIRASNTKLVCAVGSRNGTEETKLLVLDFDVDMK
```